

D4D 014

PATENT

IN THE SPECIFICATION

Pursuant to 37 CFR § 1.121(b)(1)(i)-(ii), on page 5, please delete paragraph [0022], and replace it with the following paragraph, which includes markings to show all the changes relative to the previous version of the paragraph:

“The laser light source 202 may include collimating optics ~~(not shown)~~ 204 that produce a collimated light beam 238 having parallel rays of laser light. This collimated light beam 238 is projected towards a two-axis optical scanner 222.”

Pursuant to 37 CFR § 1.121(b)(1)(i)-(ii), on page 7, please delete paragraph [0029], and replace it with the following paragraph, which includes markings to show all the changes relative to the previous version of the paragraph:

“The scanner 222 also may include a programmable position controller. The position controller may be a component of the scanner 222 or may be incorporated with the processor 236. By incorporating the position controller with the scanner ~~232~~ 222, computing resources of the processor 236 are available for other functions such as processing the image data or for more advanced processing. The position controller may comprise a commercially available controller such as the GSI Lumonics SC2000 Scanner Motion Controller which controls the scanning of the two ~~reflector~~ reflectors. The controller may be configured to control the movement of the reflectors 224, 226 by controlling the motors 244, 246. The controller may control the movement of the reflectors 224, 226 so that the collimated laser beam 238 is redirected to provide to a desired scan sequence. A coordinate system for the scanner 222 is referred to as X'Y'Z'.”

Pursuant to 37 CFR § 1.121(b)(1)(i)-(ii), on page 11, please delete paragraph [0041], and replace it with the following paragraph, which includes markings to show all the changes relative to the previous version of the paragraph:

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“Figure 3 illustrates an example of a scanned pattern of light 348 as viewed from a substantially flat surface. The scanned pattern 348 may include multiple curves 350-355 that are generated by the scanner 222. A portion of the curves 350-351 may be essentially parallel to each other. The curves 350-355 also may represent or include a connected series of points or curvilinear segments where a tangent vector n at any single point or segment obeys the following rule:

$$|n \bullet R| \neq 0 \quad (1)$$

where R (as also seen in Figure 2a) is a triangulation axis that is substantially parallel to Y and Y' and passes through an intersection of an axial ray from the image capture instrument 230 and an axial ray from the optical scanner 222. Accordingly, the angle between the tangent n at any point or segment of the curve and the triangulation axis R is not 90 degrees. Each curve 350-355 also may have a cross-sectional intensity characterized by a function that may have a sinusoidal variation, a Gaussian profile, or any other known function for cross-sectional intensity. In an embodiment, a minimum angle between a valid ray between the scanner 222 relative to a valid axial ray of the image sensor 234 is non-zero”